

INSTALLATION INSTRUCTIONS FOR COMPACT AIR

COMPACT Air



The document was originally written in Swedish.

1 SAFETY PRECAUTIONS

All staff concerned must acquaint themselves with these instructions before beginning any work on the unit. Any damages to the unit or parts of it due to improper handling or misuse by the purchaser or the fitter cannot be considered subject to guarantee if these instructions have not been followed correctly.



Warning

Only an authorised electrician or qualified service personnel trained by Swegon shall be permitted to carry out electrical installation on the air handling unit or wire external functions to it.

1.1 To Start/Stop the Air Handling Unit

The air handling unit should normally be started and stopped via the control display. Note that the control equipment of the air handling unit is still electrified after the unit has been switched off via the control display.

Pull out the plug connector before servicing the unit if not otherwise specified in the pertinent instructions or in the event of an emergency.

1.2 Risks



Warning

Before carrying out any work, make sure that the power supply to the air handling unit has been isolated.

Risk areas with moving parts

Typical moving parts are fan impellers and drive pulleys of the rotary heat exchanger. Safety guards are provided in front of these components. If the ducts are not connected to the fan outlet, these must be fitted with a safety guard (wire mesh screen).

Only a qualified electrician or trained service technicians shall be allowed to remove the safety guards.

2 INSTALLATION

2.1 General

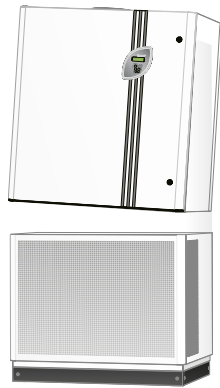
The air handling unit is delivered with packaging, standing on a wooden pallet. The kick-protection base is supplied in kit form laying inside a carton placed in the extract air duct of the air handling unit.

Any accessories that have been ordered with the unit are supplied in unmounted condition.

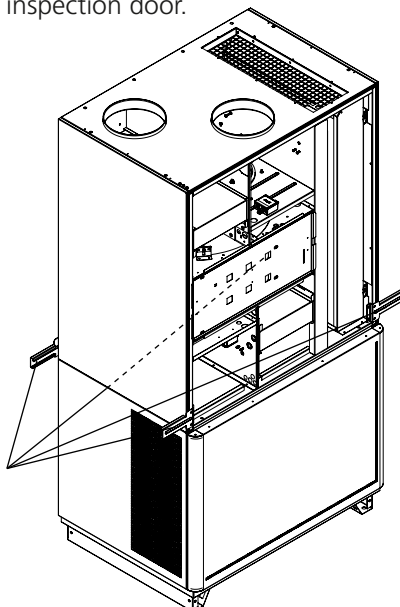
2.2 Transport Within the Site/Sectionalizing

The Compact Air unit is always supplied as one complete air handling unit. If transporting the unit within the site proves difficult, the unit can be split into sections as described below:

3.2.1 To Split the Air Handling Unit into Separate Sections to Facilitate Transport Within the Building Site.



1. Open the inspection door using the spanner supplied with the unit.
2. Dismantle the safety guard in front of the heat exchanger. Disconnect the communication cable of the control display by removing the quick connector on the control unit connection (marked HMI) and bundling strap. Pull the communication cable out all the way to the inspection door.



Lifting handles,
(set of 4)

3. Remove the screws of the upper hinge and lift off the inspection door.
4. Fasten the lifting handle (supplied, located below the extract air filter) with screws, see illustration.
5. Remove the insulation and the safety guard from the supply air fan.
6. Pull the quick connectors of the cables to the supply air fan apart to disconnect them.
7. Dismantle the supply air fan by backing off the two screws in the rear part of the fan suspension bracket. Do not unscrew them completely. Unscrew and remove the screws in the front part of the suspension bracket. Withdraw the entire fan package. The suspension bracket will then let go from the rear screws.
8. Slightly turn the fan package and withdraw it from the unit.
9. If you need to further reduce the weight of the upper section, you can also dismantle the extract air fan by repeating Items 5-8 above.
10. Remove the cable protection on the bottom of the fan compartment.
11. If the air handling unit is fitted with an electric air heater, unscrew the screws of this component, lift it up and place it loosely inside the air handling unit.
12. Remove the screws that secure the mounting bracket of the supply air sensor. Lift up the mounting bracket and the supply air sensor and place them to rest unsecured inside the unit.
13. Remove the four screws (M8) in the bottom of the upper section. These screws hold both sections together.
14. Lift off the upper section.
15. Now each section can be individually transported.
16. Reassembly should be carried out following the above steps in the reverse order.

3.2.2 To Remove the Door and Front Grille

1. Remove the safety guard in front of the heat exchanger.
2. Disconnect the communication cable of the control display by removing the quick connector on the control unit connection (marked HMI) and bundling strap. Pull the communication cable out all the way to the inspection door.
3. Remove the screws of the upper hinge and lift off the inspection door.
4. Remove the four screws that hold the front grille of the upper section, using a 6 mm Allen wrench.
5. Reassembly should be carried out following the above steps in the reverse order.

2.3 Location

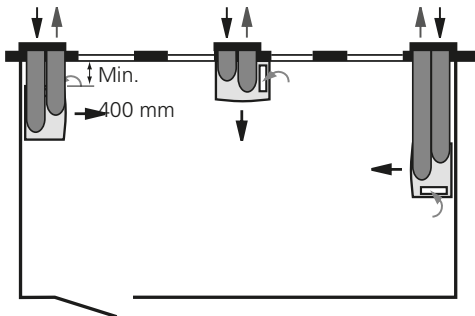
To achieve optimal operating economy it is important to design the duct system with as low a pressure drop as possible. Therefore the designer should focus on arranging the duct runs as short as possible so that there will not be more duct bends than necessary. The duct connections on the Compact Air units are arranged to enable ducts to be run in any direction without being in the way of one another.

The design of the hoods, grilles, etc. for outdoor air/exhaust air are also important. The specially constructed exterior wall hood for the Compact Air units is designed in such a way that minimizes pressure losses.

Examples of alternative locations of the Compact Air unit in a room are shown below.

Important! The air handling unit should be located at least 400 mm on either side from a wall to avoid acoustic problems. See the illustration below.

For the sake of comfort, the nearest workplace should be 1 metre from the unit. However note that at least 1,200 mm open space is required in order to be able to open the inspection door.



2.4 To Fit the Kick-protection Base

Secure the 6 screws supplied halfway into the tapped holes on the base beam of the air handling unit.

Then fit the side plates of the kick protection base (the two short plates) by pushing the keyhole fasteners over the screws from the front side of the unit. Now the side plate should hang loosely on the screws.

Fit the front side of the kick protection plate (the long plate) on the two screws on the front side. Now the front plate should hang loosely on the screws.

Adjust the position of the plates and tighten the screws.

Fasten the cover plugs, supplied, in the holes over the screws.

Important! If the unit is to be installed with its right-hand or left-hand side near a wall (min. of 400 mm), the base plate that is to face this way should be fitted before the unit is positioned at its final location.

2.5 Duct Connection

Connect 250 mm dia. spiral ducts to the outdoor air and exhaust air connections on the top side of the air handling unit.

Run the ducts through the external wall and have the duct end edge-to-edge with the façade of the building if Swegon's external wall hood is used.

The ducts can also be run through the ceiling. However this makes more complicated modifications necessary and among others places greater demands on sealing around the arrangement to achieve air tightness.

The ducts must be insulated with at least 30 mm thick insulation and be provided with a damp-proof outer layer.

2.6 Exterior Wall Hood

The CACZ-1-03 External wall hood accessory is specially designed for low pressure drop and for preventing short-circuiting between the outdoor air and the exhaust air. The standard hood is painted grey black, NCS 8502-B. See special instructions.

2.7 Existing Ventilation

The existing ventilation in the room for supply air and extract air should be blanked off or sealed. This is an important prerequisite for satisfactory ventilation and heat recovery.

2.8 Serving More than One Room

The COMPACT Air units are designed for installation and connection according the instructions in Sections 2.3, 2.6 and 2.7.

Swegon recommends this procedure.

Nevertheless it is possible to completely or partially take extract air from adjacent rooms or also to ventilate a space other than the room where the air handling unit is standing.

The problems, which one must observe in this case, are specified below. Always engage the services of a professional in this field.

2.8.1 Extract Air Intake

If the extract air is completely or partially taken from an adjacent room, note that the duct pressure drop must not exceed available pressure.

Also note that the supply air temperature is regulated in relation to the extract air temperature. If the extract air comes from another room with a different temperature, the temperature of the supply air may cause short-circuit airflows or give rise to draught problems. Pay special attention to where the extract air sensor is located.

2.8.2 Transfer Air

Transfer air grilles to adjacent rooms have a strong influence on the system's performance.

Air transfer grilles positioned low, cause the transfer of "unused" air to adjacent rooms and impair the ventilation performance in the room where the unit is installed.

Air transfer grilles positioned high involve the risk that "used" air will be transferred to adjacent rooms. Ventilation is however not impaired in the room where the unit is installed.

Important! If the doors are open, the adjacent room will also be ventilated due to the displacing air supply.

2.9 Connection to the Electric Power Grid

The COMPACT air handling unit is supplied with a power cable with mains plug, from the factory.

COMPACT Air

Cable: 3 x 1.5 mm². Mains plug, 10 AT, single-phase 230V.

2.10 To Connect External Cables

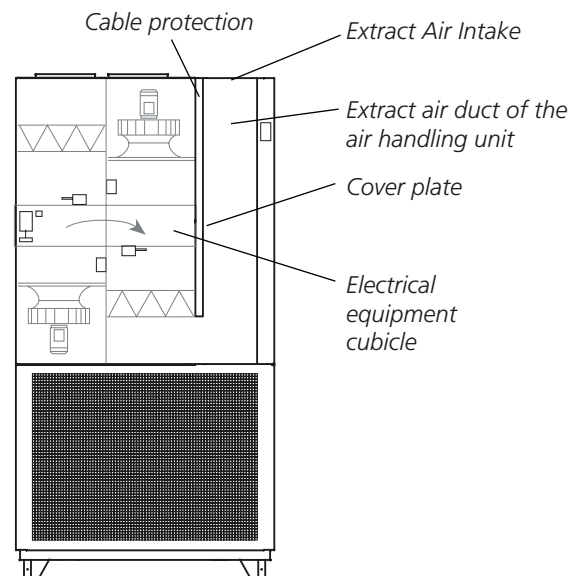
The electrical cubicle in the COMPACT Air units is located by the heat exchanger. When access to the control unit is required, the safety guard in front of the heat exchanger must first be dismantled. When access to the power unit is required, the cover plate in the unit's extract air duct must first be dismantled.

Cables from external sources can be run into the air handling unit through the rubber diaphragm by the extract air intake, located on the top of the unit.

The external cables can be extended in the existing cable protection together with the power supply cable in the extract air duct of the unit. Insert the cable in the opening in the end of the cable protection or press it in between the cable protection and the insulation.

Cables can be run in to the electric cubicle according to appropriate hole instructions in the rubber diaphragm.

N.B.! Cables for external communication outside the air handling unit must be arranged at a minimum distance of 100 mm from any current-carrying (live) cable.



2.11 To Adjust the Supply Air Discs

The positions of the supply air discs can be adjusted after dismantling the front grille of the lower section of the unit. Use a 6 mm Allen key. The screws are located within the outer holes in the corners.

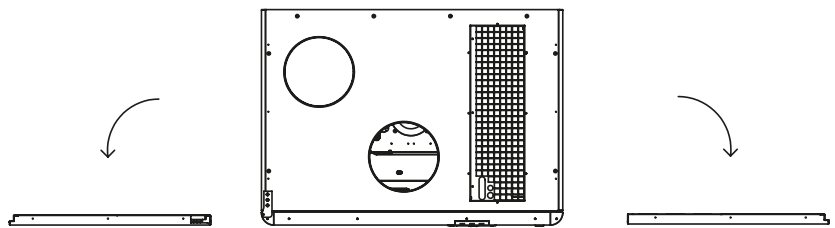
When the front grille has been removed, the air discharge direction of the front discs can be adjusted from the backside of the front grille. Turn the discs by hand to the appropriate setting.

The side discs can now also be adjusted without any further dismantling. The discs are accessible by putting your hand inside the air handling unit.

The factory-preset supply air distribution pattern and two examples of possible modified distribution patterns are shown below.

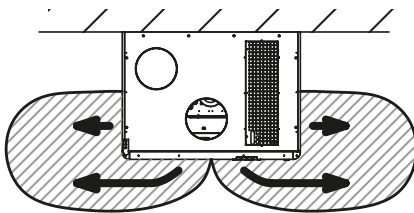
Since each disc is individually adjustable, the possibilities for modifying the air distribution pattern are practically endless.

Air handling unit viewed from above.

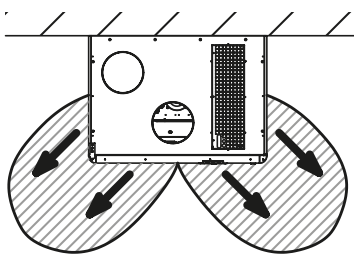


The front discs and side discs are shown from this view below.

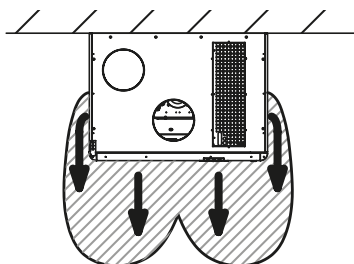
Distribution pattern



Discs in factory-preset position

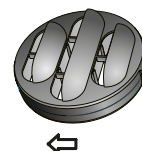
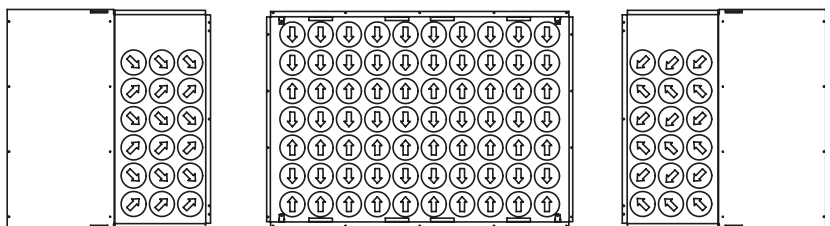
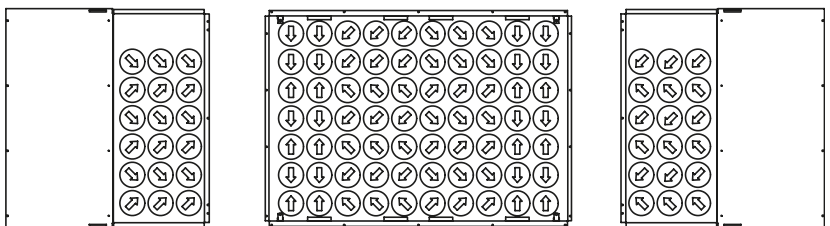
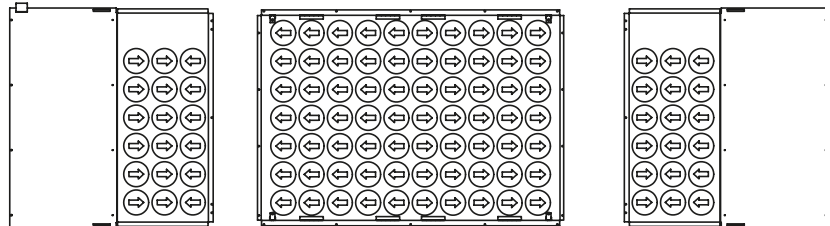


Example 1



Example 2

Front discs and side discs



The arrows shown above indicate the position of each disc.

All documentation is available in digital form and can be downloaded from
www.swegon.com